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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/825,341

04/15/2004

Sean L. Jones

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8649

7590

09/26/2005

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EXAMINER

PEACE, RHONDA S

ART UNIT

PAPER NUMBER

2874

DATE MAILED: 09/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/825,341	Applicant(s) JONES ET AL.	
	Examiner Rhonda S. Peace	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-13 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4/15/2004</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 4/15/2004 was filed in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings as submitted show several properties not suitable for publication including hand-written labeling, non-uniform darkening of lines, congested drawings without separating margins between the drawings, and slanted images. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

Claim 1 is objected to because of the following informalities: Within claim 1, the applicant has claimed the beam distorting member is in a cleave position having a chisel shape. Upon review of following claims, as well as the applicant's specification, it is the deduction of the examiner that the applicant is referring to the beam emerging from the beam distorting member as being chisel shaped, and not the actual beam

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distorting member itself. Accordingly, examination of claim 1 has been done with this deduction in mind. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-3, 8, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Presby (US 5256851) in further view of Gaukroger (US 5194711).

Addressing claims 1 and 8, Presby discloses an apparatus and method that may be applied to the cutting of an optical fiber (column 3 lines 64-68 and column 4 lines 1-4) comprising the following elements: an optical fiber **11** to be cut, an optical fiber holder **13** having an end face from which the fiber projects along the holder's central axis, a moveable support **12** upon which the fiber holder **13** is mounted, a laser **18**, and a beam distorting member **20** to focus the light beam output from the laser **18** onto the fiber **11** (column 4 lines 45-54, Figure 6). However, Presby does not disclose the use of a beam-distorting member that distorts the laser beam (by altering the Gaussian distribution of the output beam) such that a chisel shaped output beam is formed, so that the fiber may be cleaved to produce a substantially flat end face. Gaukroger discloses a method and apparatus for cutting using a high energy laser with a Gaussian intensity distribution, specifically the cutting of a diamond, where a beam distorting member **4** is used to create a chisel shaped output laser beam upon its exit from the member **4** by the altering of the laser's Gaussian distribution, in order to produce a substantially flat cut (column 2 lines 40-63, column 3 lines 28-35, Figures 2, 3, 5a, and 5b). While Gaukroger discusses this laser and lens arrangement in the field of cutting diamonds, it is also applicable to the laser cutting of an optical fiber (column 1 lines 5-15). It would have been obvious to one of ordinary skill in the art to combine the teachings of Presby and Gaukroger in order to produce a fiber with a substantially flat

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end face, as this laser/lens arrangement is well known within the laser cutting art, does not require the removal of unnecessary material, and allows the cutting process to occur in an accelerated fashion (column 1 lines 5-15).

Speaking to claims 2 and 3, Presby and Gaukroger disclose the device as discussed above. In addition, Gaukroger discloses the use of a focusing lens 4 as the beam-distorting member, and shows that its centerline is offset from the centerline of the beam (column 2 lines 25-29 and 40-43, Figures 2 and 3). In addition, Gaukroger also discusses means to move beam-distorting member 4 into a position to where a chisel shaped beam is produced. These means include the movement of a mirror with respect to the beam-distorting member 4, and therefore the movement of the laser output with respect to the beam distorter 4. The movement of the mirror allows the laser beam to be offset from the beam distorter 4, so that a chisel shaped beam is formed. It is not the actual movement of the beam distorter 4 that causes the chisel shaped beam, it is the relative movement of the laser beam with respect to the beam distorter 4 that causes the chisel shaped beam (column 2 lines 35-59, column 3 lines 28-35, Figures 2, 3, 5a, and 5b). Both types of movements accomplish the same product, which is a beam distorter that is offset from the central axis of the laser beam, allowing one edge of the laser beam to pass through the center of the beam distorter, where refraction is minimal, so that the output beam has one edge parallel to the centerline of the beam distorter 4 and a second edge that is considerably refracted by the edge of the beam distorter 4.

With reference to claim 13, Presby and Gaukroger disclose the device and method as previously discussed. As previously stated, Presby allows for a moveable support **12**, which is capable of moving the fiber **11** within the ferrule **13** in three dimensions (column 4 lines 45-48, Figure 6). It would have been obvious to one of ordinary skill in the art to move the ferrule and fiber such that flat portion of the beam is immediately adjacent the ferrule end face, as this will provide additional security to the fiber as it is being cut, and will prevent a portion of the fiber from breaking off during the cleaving process.

Claims 4-7, and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Presby (US 5256851) in further view of Gaukroger (US 5194711), and in further view of Wagner (US 6552298).

Pertaining to claims 4 and 10, Presby and Gaukroger disclose the cleaving device and method as previously discussed. However, Presby and Gaukroger do not disclose the presence of a monitor member for which to produce a visual image of the beam, fiber, and holder end face, or similarly the distorted beam with respect to the holder end face. Wagner discloses the use of a monitor member **76** for producing a visual image of the area immediately surrounding the fiber end face (column 7 lines 33-64, Figure 1). It would have been obvious to one of ordinary skill in the art to incorporate the teachings of Wagner, Presby, and Gaukroger, so that real time monitoring of the cleaving process can be accomplished and applied to various tasks

associated with the cleaving of a fiber, including the movement of fiber (column 7 lines 60-64).

Speaking to claims 5-7, and 12, Presby, Gaukroger, and Wagner disclose the cleaving device and method as previously discussed. In addition, Wagner discloses the use of a CPU and control panel **82** for receiving signals from the monitoring device **76** and producing positioning signals for the fiber supports **38** and **72**, so that the fiber may be moved (column 7 lines 33-64, Figure 1). Furthermore, Gaukroger discloses the use of a focusing lens **4** as the beam-distorting member (column 2 lines 25-29 and 40-43, Figures 2 and 3). Finally, Gaukroger also discloses the centerline of the lens **4** is offset with respect to the centerline of the beam prior to entering the lens **4** (column 2 lines 40-44, Figures 2 and 3).

Addressing claim 11, Presby, Gaukroger, and Wagner disclose the cleaving method as previously discussed. In addition, and as previously stated, Gaukroger also discusses means to move beam-distorting member **4** into a position to where a chisel shaped beam is produced. These means include the movement of a mirror with respect to the beam-distorting member **4**, and therefore the movement of the laser output with respect to the beam distorter **4**. The movement of the mirror allows the laser beam to be offset from the beam distorter **4**, so that a chisel shaped beam is formed. It is not the actual movement of the beam distorter **4** that causes the chisel shaped beam, it is the relative movement of the laser beam with respect to the beam distorter **4** that causes the chisel shaped beam (column 2 lines 35-59, column 3 lines 28-35, Figures 2, 3, 5a, and 5b). Both types of movements accomplish the same product, which is a beam

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distorter that is offset from the central axis of the laser beam, allowing one edge of the laser beam to pass through the center of the beam distorter, where refraction is minimal, so that the output beam has one edge parallel to the centerline of the beam distorter 4 and a second edge that is considerably refracted by the edge of the beam distorter 4.

Allowable Subject Matter

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The most applicable prior art discussed within this action do not disclose the step of polishing the end face of the fiber in a single polishing step. It is therefore the opinion of the examiner that this polishing step, when taken with claims it is dependent upon, creates a distinct process, and is thereby patentable.

Claim 14 is allowed.

The following is an examiner's statement of reasons for allowance: The most applicable prior art discussed within this action does not disclose, nor does it reasonably suggest using the method or device discussed previously to create optical jumper cables, further including a single polishing stage to polish the end of the fiber, and an inspection and testing stage. It is therefore considered a novel device, and, in the opinion of the examiner, is thereby patentable.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Presby (US 4710605) discloses a method and device by which to utilize a laser exhibiting a Gaussian distribution in order to cut an optical fiber. Dahmani et al (US 6612754) discloses a method and apparatus for splicing optical fibers that may also be applied to cleaving or cutting optical fibers

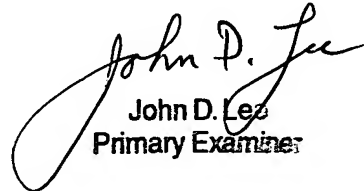
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda S. Peace whose telephone number is (571) 272-8580. The examiner can normally be reached on M-F (8-5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272- 2344. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Rhonda S. Peace
Examiner
Art Unit 2874


John D. Lee
Primary Examiner